

# Physical Science (Science)

Required – Year – 9

Prerequisites: None

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## Course Description

Physical Science begins with a study of the Christian viewpoint of science. This study will be the foundation upon which all courses at Luther are taught. After the Christian foundation has been laid, the remainder of the course will introduce to the student introductory topics in physics and chemistry. Students will also be introduced to various laboratory techniques.

## Course Goal

Physical Science is a core course, which sets the base for all other science studies at Luther. The Christian teacher will:

- Provide basis for understanding the physical sciences as God's marvelous creation.
- Reinforce the student's understanding of the relationship between science and religion.
- Introduce the student to basic laboratory equipment.
- Instill an understanding of laboratory safety.
- Lead the students to an understanding of the scientific method.
- Foster learning for students in small group, large group, and individual settings.
- Lead students to develop observational skills
- Develop an understanding of the effects of science/technology on our lives.
- Foster a feeling of familiarity, ease and enjoyment with concepts, process, and content of science.

## Course Objectives

Upon completion of Physical Science the student will:

- Express confidently the different, yet harmonic nature between science and religion
- Convert measurements within the metric system.
- Work productively in small and large groups.
- Work safely in a laboratory setting.
- Identify basic laboratory equipment
- Investigate and analyze problems by the scientific method.
- Identify benefits of science/technology in his/her life.

## Course Outline

- Course Introduction & Philosophy
- The Nature of Science
- Motion
- Forces
- Energy
- Work and Machines
- Thermal Energy
- Electricity
- Magnetism and Its Uses
- Energy Sources
- Classification of Matter
- Solids, Liquids, and Gases
- Properties of Atoms and the Periodic Table
- Elements and their properties
- Chemical Bonds

### **Instructional Strategies**

A number of different teaching approaches are used. These include: lecture, cooperative learning activities, laboratory experiences, demonstrations, and videos. Classroom discussion and lecture is based on the vocabulary and content found in the text. Laboratory activities illustrate the content and processes presented in the text and by the instructor. Where full laboratory activities are impractical, demonstrations and videos are used.

### **Grading Methods**

- All assignments are due at the beginning of each class period unless indicated otherwise.
- Each chapter will consist of
  - Lesson worksheets
  - Laboratory work and/or other activities
  - Quizzes
  - Review Day
  - Test Day
- Grades will be determined on a point scale. Letter grades will be awarded on the following percentage scale:
  - A+ 100-99
  - A 96-98
  - A- 93-95
  - B+ 91-92
  - B 87-90
  - B- 84-86
  - C+ 82-83
  - C 78-81
  - C- 75-77
  - D+ 73-74
  - D 69-72
  - D- 66-68
  - F 65 & Below

### **Student Materials**

Students are required to have the following:

- Physical Science Textbook
- 3-ring binder
- Loose leaf paper
- Scientific calculator
- Pencil & pen
- AGENDA

### **Classroom Procedures**

**Tardy** – A student not in the classroom when the bell rings is considered tardy.

**Make-up Work** – Students who are absent due to illness will have two days to complete missed assignments (i.e. tests, quizzes, labs, etc.) Students who miss class for appointments or other pre-arranged activities or meetings are expected to complete missed assignments that day. In the event of difficulties, always speak with the instructor.

**Behavior** – Students are expected to conduct themselves as sanctified Christians at all times.